

[54] **ELECTRIC LAMP COMPRISING A LAMP BASE OF A SYNTHETIC MATERIAL**

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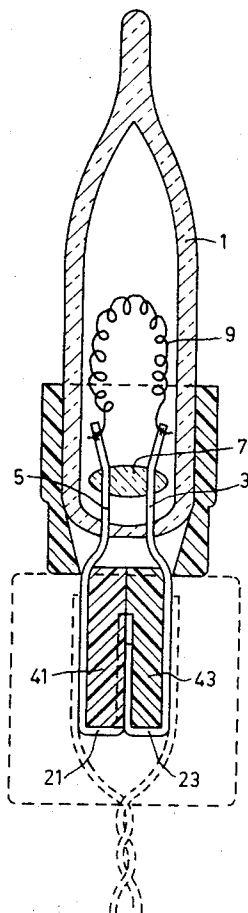
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[57] **ABSTRACT**

An electric lamp comprising a lamp base of a synthetic resin in which current conductors projecting from the envelope of the lamp extend over a portion of their length outside of the lamp base to function as contacts to an external power supply.

1 Claim, 4 Drawing Figures



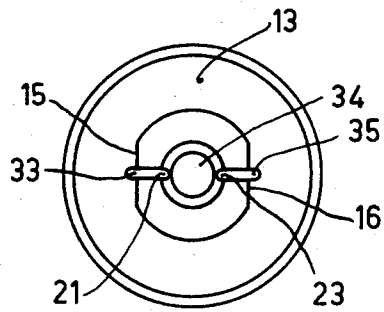
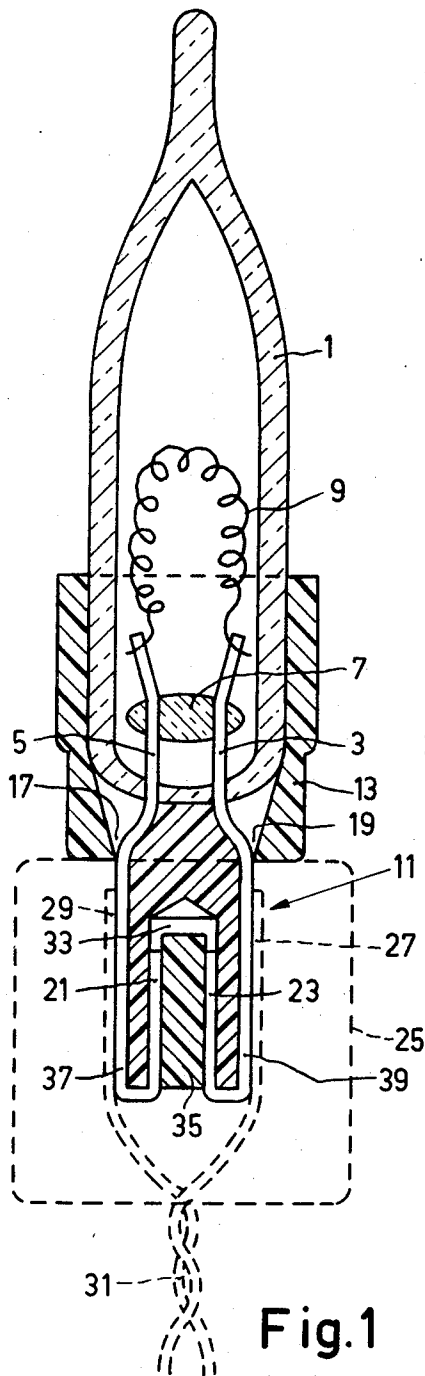
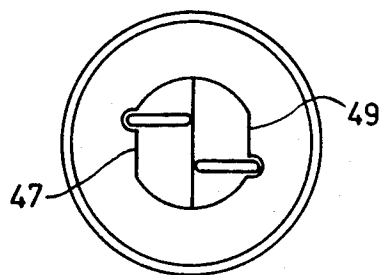
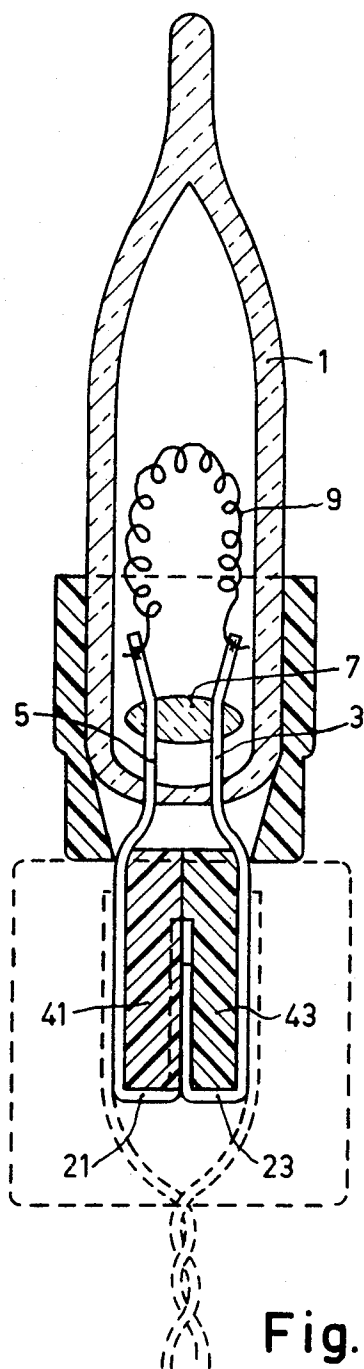


Fig. 2

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ELECTRIC LAMP COMPRISING A LAMP BASE OF A SYNTHETIC MATERIAL

The invention relates to an electric lamp comprising a lamp base of a synthetic resin in which one or more conductors projecting from the lamp vessel extend over part of their length on the outside of the lamp base as external current contact members. Such a lamp is known.

The known construction is in the form of a miniature filament lamp of the Pisello type comprising a lamp base of a synthetic resin. The lamp base of said lamp is inserted in one of the holders of a Christmas tree illumination set. Said holders comprise electric contact members which are in contact with the current conductors extending on the outside of the lamp base.

In the known construction a lamp base is used which comprises two parallel longitudinal channels through which the current conductors are threaded. The conductors projecting from said channels are furthermore bent backwards to the outside over an edge portion of the lamp base along the outside of the lamp base where they further extend in a non-fixed manner.

In order to prevent the two conductors projecting from the lamp from contacting each other in the lamp base, the two longitudinal channels in the conventional constructions are prescribed for reasons of safety, one for each conductor. Considering that the lamp base construction described is used in particular for lamps having particularly small dimensions, for example, a diameter of the envelope of 1.5 mm, and the lamp base shows correspondingly small dimensions, it will be obvious that the channels in question through which the conductors have to be threaded both are extremely small and are situated at a small distance from each other. The threading of the conductors in the said channels has always been a time-consuming job which in practice is still carried out manually by home workers. This process can hardly be mechanized.

It is the object of the invention to provide a construction in which electric conductors also extend on the outside of the lamp base with which conductors contact can be made in a holder. The construction of this lamp base, however, is such that the above-mentioned threading operation is omitted and on the other hand the attractive possibility is offered of securing in the lamp base also in a simple manner the free ends of the current conductors projecting from the lamp.

For that purpose, the lamp according to the invention is characterized in that the parts of the relative conductors remote from the lamp vessel extend mainly on the outside of the lamp base, are bent inwards with their free ends around a wall portion of the lamp base, and are secured in the lamp base. It is preferably ensured that the parts of the conductors extending on the outside of the lamp base also extend for the greater part in the longitudinal direction of the lamp. A combination thus formed hence forms an indissoluble unit. Since in the construction according to the invention the ends of the current conductors are not incorporated on the outside of the lamp base but inside the lamp base, the attractive possibility is offered of stretching the conductors on the outside of the lamp base and causing them to extend in a prescribed manner which promotes the making of a good electric contact in a holder. It will be obvious that this combination of lamp with lamp base as a unit can simply be manufactured mechanically; actually it is no longer necessary to provide the lamp base with two particularly narrow channels in the central portion of the lamp base, which channels are situated very close together. In manufacturing this combination it is sufficient to spread the conductors, pull them around the outer surface of the lamp base, and secure the ends of the conductors in the lamp base, in a manner to be described in detail, after having bent them back around the circumferential edge which is farthest remote from the lamp vessel.

In order to fix the ends of the conductors, a particular embodiment may be used which is characterized in that the side of the lamp base remote from the lamp vessel comprises a recess in which the free ends of the relative conductors are held in place in a manner in which they are electrically insu-

lated from each other by a member of insulating material secured in said recess. In this construction, the ends of the conductors, after having been bent about the circumferential edge of the lower portion of the lamp base, are returned in the lamp cap and held in place there by a stopper which is provided in said lamp cap and which may also consist of a synthetic resin. The conductors are thus secured between said stopper and the wall of said recess present in the lamp base. Said stopper may be secured in the recess by gluing; alternatively, the stopper may be given a conical shape and be formed into the recess. Particularly this latter embodiment has the additional advantage that the conductors extending on the outside of the lamp base are stretched additionally so that said conductors extend in a uniformly prescribed manner along the outside of the lamp base and on the other hand the lamp is rigidly secured to the lamp base.

Instead of using a recess present in the lower side of the lamp base for receiving a stopper, another embodiment may be used, if desirable, which is characterized in that the lamp base is divided in its longitudinal direction, the ends of the current conductors being incorporated in the dividing plane of the lamp vessel in an insulated manner relative to each other, the two parts of said lamp base being secured together in an undetachable manner. The two halves in question of the holder can be secured together either by gluing or by means of pins present on one part which can be clamped in holes present on the other part.

Also because a very rigid fixing of the current conductors is used, it is possible in principle to form the lamp base as a continuation of the bottom portion of the lamp vessel. The location is shaped so that it contacts only said bottom portion of the lamp. In that case it is not necessary to also partly support the cylindrical part of the envelope adjoining said bottom portion which in the known constructions of lamp base is unavoidable. In those conventional constructions, the lamp base comprises a thickened cup-shaped upper portion which surrounds the relative cylindrical part of the lamp vessel in a clamping manner. If it is desirable, for example, for aesthetical reasons, to provide the lamp base according to the invention also with such a cup-shaped upper portion, a few apertures should be provided at the place of the transition between said upper portion and the thinner base portion for passing the conductors to the outside of the thinner lamp base portion. Otherwise, said apertures can be proportioned particularly excessively, so that the threading of the conductors through said apertures presents no problems.

In order that the invention may be readily carried into effect, two embodiments thereof will now be described in greater detail, by way of example, with reference to the accompanying drawings, in which

FIG. 1 is a longitudinal cross-sectional view of the lamp according to a first embodiment

FIG. 2 is a view from below of the lamp as shown in FIG. 1,

FIG. 3 is a longitudinal cross-sectional view of a lamp having a holder of synthetic material according to a second embodiment, and

FIG. 4 is a view from below of the lamp shown in FIG. 3.

The combination shown in FIG. 1 shows an electric filament lamp of the Pisello type; it comprises a lamp vessel 1 and a set of sealed current conductors 3 and 5, which are united by means of a glass bead 7. 9 denotes the electric filament. This lamp comprises a lamp base 11 which is flattened on two sides and comprises a cup-shaped portion 13. The cup-shaped portion comprises a location which is adapted to the contours of the bottom of the lamp vessel 1. Said lamp base 11 comprises two apertures 17 and 19 through which the conductors 3 and 5 are threaded. Said conductors extend along the flat sides 15 and 16 and are bent backwards around the lower edge of the lamp base. The free ends of the conductors are denoted by 21 and 23 and are bent backwards in the manner shown and incorporated in the lamp base.

This lamp which comprises a lamp base is suitable for use in series-arranged holders 25, for example, of a Christmas tree il-

lumination set. These holders each comprise a set of contact lugs 27 and 29 which are connected to a supply cable 31.

The said ends 21 and 23 of the conductors are rigidly secured in the lamp base by means of a stopper 35 to be provided in a central recess 33, which stopper, after insertion, is clamped in the recess 33 serving as a chamber and clamps the ends of the conductors 21 and 23 between the wall of the said chamber and the outside of the stopper 35. At the same time the parts 37 and 39 extending on the outside are rigidly stretched relative to the lamp vessel 1. Another method of securing the stopper 35 is by a gluing operation. In both cases the indissolubility of the envelope and the lamp base is ensured.

According to a second embodiment the lamp base shown in FIGS. 3 and 4 comprises two identical halves 41 and 43. In this case also the lamp base comprises two flat sides 47 and 49 against which the conductors projecting from the lamp bear. The fixing of the free ends of the conductors takes place, for example, by orienting said conductors, extending at some distance from each other, in the dividing plane of the lamp base. In a position in which the parts 41 and 43 are spaced apart, the relative conductors are bent at an angle around its associated half of the lamp base, after which the two parts 41 and 43 are moved against each other and secured, for exam-

ple, by gluing.

What is claimed is:

1. An electric lamp assembly comprising:
an envelope having a longitudinal axis;
at least two current conductors projecting from said envelope parallel to the longitudinal axis of said envelope;
and a lamp base of synthetic resin, said base being divided in the longitudinal direction into two approximately identical portions, inner walls of said portions contacting at a single planar surface, said inner walls having longitudinal recesses therein adapted to receive current conductors, said recesses also being spaced apart and completely insulated from each other, said base portions also being secured to each other in an undetachable manner, said current conductors extending over the longitudinal walls outside of said lamp base for a portion of their length and adapted for use as external current contact members, said current conductors further extending along the bottom exterior walls of said base portion, the ends of said current conductors being extended to and disposed within said recesses, whereby the current conductors are clamped in an insulated fashion by said portions of said lamp base.

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